

# Handbook on Household Hazardous Waste

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## CHAPTER 6

# Community-Based Social Marketing and Behavior Change

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In recent years, many public and private organizations have implemented programs and outreach campaigns designed to promote environmentally responsible behaviors. These programs have addressed a range of behaviors including recycling, energy conservation, household hazardous waste disposal, litter reduction, green buying, utilization of public transportation, and ride sharing, to name a few. These programs are typically created to address an identified problem or meet an adopted policy or mandate. Yet, without exception, the success of these programs hinges on community participation. That is, success requires behavior change on the part of residents. Too often, at some point in the program (or sometimes from the outset), participation wanes.

In an effort to bolster the program and motivate behavior on the part of residents, program managers take action in two primary ways: (1) change the program, or (2) market the existing program with the hope of increasing participation. Most programs begin with the latter (usually because it is cheaper). They develop a series of messages—either in-house or with the help of an ad agency—intended to “raise awareness” and “educate” the community about the program and the problem it addresses. These approaches tend to be primarily information based, with the goal of “getting the message out.” Such messages are not unique to HHW programs. Indeed, corporate, government, and non-governmental entities worldwide spend billions of dollars developing media campaigns in an attempt to increase knowledge or raise awareness about engaging in a particular behavior. The assumption is that if people are educated about a particular behavior (such as the location of a community HHW collection center), or if they knew about the magnitude of the problem (*e.g.*, pollution from improper disposal), they would act. We assume that “if people only knew, they would surely do the right thing.” Unfortunately, behavioral science suggests that this assumption is flawed. Although information-based campaigns can positively increase awareness and

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attitudes about a specific behavior or problem, they are largely ineffective at creating lasting changes in behavior.<sup>1</sup> While our focus in this chapter is on environmental behaviors, the ineffectiveness of information-based messages at changing behavior has repeatedly emerged from a variety of applied research domains.<sup>2</sup>

Despite the research showing the ineffectiveness of these traditional information-based approaches, they continue to be widely implemented. Fortunately, there are more effective alternatives. For more than 100 years, psychological research has uncovered a range of basic principles about motivation and behavior, and from this research have emerged several techniques that can be easily implemented. While these techniques have been widely known in the academic literature for many years, researchers and policymakers in applied fields have only recently begun to incorporate them into their programs targeting behavior change.

The strength of using social psychological principles of behavior change is that they take into account both personal and situational variables. Decades of research in social psychology have provided an arsenal of tools for changing behavior, and a number of useful theoretical models.<sup>3</sup> In the current chapter, we present Community-Based Social Marketing as a broad approach that can be used to promote behavior change across a variety of settings. After introducing the basic framework, we illustrate with three program examples targeting the proper disposal of used motor oil. Finally, we discuss several important considerations for practitioners interested in following this approach.

## Overview of Community-Based Social Marketing

Community-Based Social Marketing stands in stark contrast to the traditional information-intensive approach still so widely utilized by applied organizations. CBSM is unique in that it packages basic principles of social psychology with applied research methods in a way that provides a usable framework for practitioners working to promote behavior change. While CBSM has been used primarily in the context of pro-environmental behavior, it is easily applicable to a range of other behaviors. Community-Based Social Marketing uses a four-step process to foster sustainable behavior change.<sup>4</sup> These four steps are: (1) identifying the barriers to a targeted behavior, (2) using behavior change tools to overcome the barriers, (3) piloting the selected tools using empirical research methodology and a control group, and (4) evaluating the project once it has been widely implemented. Below we briefly elaborate on each step.

### Step 1: Identifying Barriers

The CBSM approach recognizes that barriers to engaging in environmental behaviors vary depending on the population, context, and behavior of interest, and that multiple barriers can exist simultaneously for each behavior. These barriers can be either internal to the individual (*i.e.*, motivation) or external to the individual (*i.e.*, structural elements of the program). The first step in the CBSM approach is to identify the barriers for the target behavior through reviews of existing literature, focus groups, and surveys.

The fundamental element of the barrier identification process is to focus on people who *don't* already engage in the target behavior. If the goal of the program is to collect waste pesticides at a HHW collection facility, it is important to identify the barriers perceived by people who *don't* already use the facility. Doing surveys or interviews with individuals at the facility will provide interesting data—but it is dangerous to assume that the findings will generalize to the broader population. Indeed, the fact that they showed up at the collection facility when others did not, makes them qualitatively different. Uncovering barriers is a hallmark feature of the CBSM approach, and an essential first step in creating an effective outreach campaign or improving an existing program. But it means going outside the office, beyond the individuals who are already utilizing the program, and getting information about the target audience—people who *don't* use the program.

## **Step 2: Tools of Behavior Change**

The second step in the CBSM approach is to select a behavior change tool that addresses the identified barriers, and to use these tools to develop intervention and program materials that will overcome these barriers and change behavior. The first question that needs to be answered is whether the reasons for not participating in the program are internal or external to the individual. External barriers are aspects of the program itself that decrease the likelihood that an individual will participate. They are sometimes referred to as “structural barriers.” For example, limited days and hours of operation, travel distance to an HHW collection, difficulty of the behavior, and inconsistent collection methods are structural elements of the program that may operate as barriers to participation. Internal barriers reside within the individual and include psychological variables like motivations, perceptions, beliefs, or attitudes. Examples of internal barriers include unfavorable attitudes toward the program, lack of knowledge about the program or how to use it, seeing the behavior as unimportant, or perceptions that few others use the program. The greatest strength of CBSM as an alternative to information campaigns is that it draws heavily on the social science research literature, particularly the social psychological literature, to identify tools for overcoming internal barriers. These tools may include providing normative information, using commitment and consistency, and using the norm of reciprocity. Later in this chapter we provide a more detailed summary of behavior change tools.

## **Steps 3 and 4: Piloting and Evaluating the Strategy**

Once the behavior change program has been designed, the third step is to pilot the intervention strategy. Based on the CBSM approach, the program should be piloted with a small portion of the community using an intervention and a control group. If the pilot is not successful, the strategy should be refined and then piloted again. If the pilot is successful at changing behavior, the strategy can be implemented more broadly. Once the successfully piloted program is in place within the community, the fourth step of CBSM requires that the program be carefully evaluated by comparing baseline measures of behavior to behavior at several points following the intervention. Wherever possible, the large-scale evaluation should also include a control group.

## Advantages of Community-Based Social Marketing

The CBSM approach is rapidly gaining acceptance in a variety of governmental and non-governmental organizations (see [www.cbsm.com](http://www.cbsm.com) for hundreds of notable examples). The strengths of the CBSM approach are fourfold. First, the decisions made at each step of the program development process, from design to implementation, are based on empirical data. This is a substantial improvement over intuition or historical precedence, and it offers a solid foundation for developing an effective program. Second, the program is pilot tested on a small scale *before* large-scale implementation. This can be a cost-saving mechanism that allows the development team to try out different approaches until they are confident that their approach will work. The third strength of the CBSM approach is program evaluation. Ongoing evaluation ensures that at the conclusion of the program, there are data to substantiate the effectiveness (or lack thereof) of the program. These data can be invaluable in informing subsequent outreach campaigns, changing or proposing new local policies, or demonstrating compliance efforts with political mandates (e.g., diversion rates).

The fourth strength of the CBSM approach is a focus on behavior. In recent years, many applied areas of research have focused more on *intention* or *attitude* as outcomes, rather than behavioral outcomes. In part, this shift was one of efficiency—studying behavior requires a time lag in measurement, whereas attitudes can be assessed as an immediate outcome. That is, behavior change typically occurs at a later time and in a different context from the intervention, adding an additional layer of difficulty to the evaluation process. Attitudes are an easy proxy. However, there is evidence that attitudes or intentions can change without a corresponding change in behavior, and it appears that attitudes are more malleable to outreach messages than is behavior. Note that this finding does not imply that changing attitudes will not lead to a change in behavior, only that the linkage is imperfect and inconsistent. In other words, behavior change resulting from an intervention can be mediated by changes in attitudes or intention, but focusing on these as the primary outcomes does not substitute for measurements of behavior.

## Applications of Community-Based Social Marketing

The Community-Based Social Marketing approach has been successfully used to change a wide range of environmentally responsible behaviors including energy conservation, reduction of CO<sub>2</sub> emissions, water conservation, recycling, and use of public transportation.<sup>5</sup> CBSM methods have also been used to address activities contributing to poor air quality such as improper automobile maintenance and engine idling. One environmental issue that has gained considerable attention in recent years is the problem with greenhouse gas emissions (particularly CO<sub>2</sub>). While a number of behaviors contribute to this problem, the CBSM approach involves targeting a specific behavior that can be changed at a community level. For example, the *Turn It Off* project used CBSM to encourage motorists to avoid idling their engines while waiting in their vehicles.<sup>6</sup> After identifying barriers and motivations related to the specific behavior, the researchers designed marketing materials utilizing psychological tools of behavior change to remove the perceived barriers. The materials consisted of various combinations of prompts, public commitments, and information about

the benefits of turning off their motors. The frequency and duration of engine idling was measured at baseline, during the intervention, and at follow-up. Results showed that while informational signs alone were not effective, the combination of public commitment and signs reduced the frequency of idling by 32% and the duration of idling by 73%.<sup>7</sup>

In our own work, we successfully used the CBSM approach to increase proper tire maintenance among California motorists in an effort to reduce the number of waste tires generated.<sup>8</sup> By surveying a random sample of California motorists, our research team identified improper tire inflation as the primary behavior linked with increased tire wear (compared with alignment, balancing, rotation, or checking tread). Indeed, our survey showed that 59% of vehicles on the roadways in California had at least one tire that was over- or under-inflated by 5 PSI, and 64% of respondents reported not checking their tire pressure within the past month (the interval recommended by tire manufacturers). Based on the barrier survey findings, we then proceeded to develop, implement, and evaluate an intervention promoting proper tire inflation. The intervention had both a structural component (we provided motorists with a free tire pressure gauge) and a motivational one (e.g., advertising the safety of properly inflated tires). In a pilot intervention conducted with local gas stations, we were able to produce a 46% increase in the number of motorists who reported checking their tire pressure in the past month, and a 17% decrease in the number of vehicles with one or more improperly inflated tire. In contrast to traditional marketing campaigns that were already in place (e.g., local billboards and radio advertisements), the *community-based* approach ensured that the strategies were designed to target specific barriers and motivations as well as a specific behavior.

These examples illustrate the potential of the CBSM approach for promoting behavior change. In the next section, we focus on a specific behavior—used motor oil disposal—and describe three pilot interventions that were developed and tested in diverse regions of California.

## The Problem of Waste Motor Oil

The 20th century saw a transformation of the American landscape, brought about by the automobile. Automobile manufacturing revolutionized economic and industrial practices; the availability of cars altered the lifestyles of working Americans; and consumption and pollution resulting from combustion engines directly affected every person in the country. In 2004, 92% of households in the United States had a vehicle available to them for regular use, and personal vehicles were used for over 97% of all trips of fewer than 300 miles. The U.S. Department of Transportation estimates that in 2004, there were 243 million cars on U.S. roadways, and the average household had nearly two vehicles. In 2001, Americans drove a total of 2,287,000,000,000 (trillion) miles, and the average motorist drove an estimated 16,000 miles per year.<sup>9</sup>

Because cars are primarily powered by combustion engines, lubrication of moving parts is essential. In order to promote engine longevity and performance, automobile manufacturers recommend changing a vehicle's motor oil at specified intervals, ranging from 3,000 to 15,000 miles. In practice, the average motorist changes his or her motor oil every 4,200 miles.<sup>10</sup> That's approximately four oil changes per vehicle, per year. The average oil

change uses 1.25 gallons. This results in more than 1.1 billion gallons of motor oil sold each year.<sup>11</sup>

Used motor oil poses a number of threats to the environment. Used motor oil is insoluble and can contain heavy metals and toxic chemicals, which can directly harm living organisms.<sup>12</sup> In the environment, motor oil pools on the surface of ponds and lakes, blocking sunlight, impairing photosynthesis, and destroying natural habitats. Motor oil contaminates drinking water and can render fertile soil unusable for agriculture. Alarming, the U.S. Environmental Protection Agency estimates that 200 million gallons of used motor oil are improperly disposed by consumers each year.<sup>13</sup> It is the leading contaminant in the nation's waterways, and banned in landfills nationwide.<sup>14</sup>

California, like many states across the country, tracks the volume of motor oil sold and recovered. In 2005 (the most recent data available), 153.5 million gallons of lubricating oil were sold in the state. Of this, 91.3 million gallons were collected for recycling or disposal—a 59% capture rate. The remaining 41% of the oil sold was either stored, burned off, spilled, or improperly disposed.<sup>15</sup> While the federal government has not classified waste motor oil as hazardous, it is so classified in three states (California, Massachusetts, and Rhode Island), and nationwide it is handled like other household hazardous wastes (*e.g.*, pesticides, cleaners) at HHW collection sites. Used motor oil has many alternative uses and can easily be recycled. It can be re-refined into oil or other lubricants; it can be reprocessed into fuel oil or diesel oil; and it can be burned for industrial processes or heating. Collecting the oil requires a collection infrastructure, and more important, it requires behavior on the part of the motorists.

The majority of the used oil that is collected comes through automotive service stations or dealers. While a large majority of motorists utilize a professional mechanic or service shop for their cars' oil changes, a substantial percentage of motorists choose to change their own oil. Nationally, an estimated 40% of motorists are do-it-yourself (DIY) oil changers.<sup>16</sup> However, this figure varies dramatically by state, area, and demographics. In California, surveys suggest that 19% of the population change their own oil, and DIY oil changing is more common among men, older individuals, those with lower income, lower education, and more in rural settings.<sup>17</sup> Many states report an oil capture rate in excess of 95% for oil changed at service stations or by professionals. But the capture rate for DIY oil is substantially lower—generally only 30–40%.<sup>18</sup>

Nationally, there are a number of different collection systems for DIY oil. The most common is to integrate oil collection with stand-alone waste collection facilities. However, the low rate of participation for such stand-alone centers results in very little oil collected.<sup>19</sup> Some states have partnered with automotive retailers to provide a collection mechanism at the point of purchase. Other collection sites include mechanics and local shops, unstaffed storage facilities (particularly for rural areas), transfer stations, and curbside collection programs. To support these programs, many states have followed the Petroleum Institute's Model Bill that attaches a fee of 2–4 cents per quart of oil sold. The funds are used to support local programs, research, and marketing. Despite efforts to build an oil collection infrastructure, however, many programs have remarkably low rates of participation.

Once a used oil collection program is established, how do we motivate DIYers to participate? More specifically, how can we move beyond the informational brochure or billboard and utilize CBSM techniques to promote proper oil disposal among DIYers? In the following section, we summarize three strategies that were pilot tested in California.

For each program, we describe the CBSM process through the first three steps (identifying barriers, developing interventions, and pilot testing with a control group). Combined, the results suggest that DIYers can be motivated to participate in collection programs, and that CBSM provides a useful toolkit for practitioners working on these programs.

### **Curbing Improper Oil Disposal in Napa County**

This first CBSM program example comes from a DIY program we designed and piloted in Napa County, California. Napa County is a small rural county north of the San Francisco Bay Area. The county has a population of approximately 125,000, with most individuals clustered into four city areas. Census data show that the county is mostly white in racial background (80%), with a median household income of \$52,000.<sup>20</sup> The oil collection program in Napa County includes 20 collection centers, as well as a curbside oil collection program offered to single family households in the four more densely populated areas.

The current project focused on the existing curbside collection program that served 5,400 single-family households (about 20% of the county's population). To utilize the curbside collection program, residents needed to call the hauler to join the program and receive a free oil-recycling container. The program also required that residents call to request a pickup, and then place the oil at the curb on collection day. Using the 19% DIY rate, we estimated that there were 1,026 potential users of the curbside program generating an estimated 8,593 gallons of oil each year. Yet, only 339 DIYers were enrolled in the program. Furthermore, in the year prior to our intervention, only 600 gallons of oil were collected through the curbside program.

After assembling the background data, we conducted a telephone survey with a small sample of Napa County residents to identify the barriers to oil recycling. Using a Random Digit Dialing technique, we contacted 509 residents in Napa County. Of these, 95 (19%) were do-it-yourself oil changers, and 56 were homeowners who lived in the regions served by the curbside collection program. The most frequently cited disposal method for used oil was a county-maintained HHW collection facility (45%), followed by a retail collection center (33%). Curbside collection was listed by 11% of respondents. The admitted improper disposal rate was 5%.<sup>21</sup>

Our survey identified two key motivational (internal) barriers to utilizing the curbside collection program. The first was a lack of knowledge. Only 45% of residents served by the curbside program knew about its existence, and of those who knew about the program, only 8% could describe the program in any detail. The respondents who knew about the program had favorable attitudes about curbside collection and believed that it was easy to use. The second uncovered barrier was a perception that most other residents did not use the program. That is, there was a social norm against utilizing the curbside collection program.

In an effort to increase utilization of the program, we created and distributed two motivational pieces about the program through postal mail. Note that there are a number of other avenues we could have pursued with our intervention, including a potential structural intervention to make collection easier (e.g., remove the need to call and request a pickup). Based on the available data and the feedback from the hauler regarding costs associated with a structural change, we opted to focus on the motivational side of the equation.

Additionally, we chose to use direct mail as our message medium. Alternatively, we could have developed point-of-purchase pieces, or inserts in the waste management or utility bill. Both of these would have provided viable channels for distributing our message since they would reach the full audience (including residents who do not already use or know about the program). However, point-of-purchase or billing inserts were a bit too broad, and potentially could have reached many residents who were not served by the collection program. Conversely, distributing flyers at a community HHW event, or at the county collection centers, would have been unlikely to reach our target audience—those who were not already engaging in the desired behavior. Direct mail provided us with an affordable, broad-based distribution channel for reaching all households in our target area.

The first direct-mail piece was a trifold, color brochure with information about the program and testimonials from local residents about the ease and benefits of using the curbside program (along with pictures and quotes from local residents). The brochure was randomly included with either a mail-in response card or telephone number for residents to join the program. By using a call-in number versus a mail-in response card, we intended to evaluate the possible external barrier of making a phone call to join the program. A second direct-mail piece was sent a week following the first, and reinforced the basic normative message.<sup>22</sup> Importantly, the marketing materials were designed specifically to target the identified barriers (lack of knowledge, low social norm) and were embedded within the target community (*e.g.*, testimonials from local residents, local contact information). It also highlighted a specific target behavior—join the program.

The brochures were distributed using a delayed treatment control group. That is, two of the four populated areas received the mailing first, and then three months later the remaining two areas received the mailing. This allowed for a comparison of the response to the brochure against an untreated control condition. We want to underscore the importance of using a control group to evaluate the impact of outreach materials. Had we distributed the marketing materials to all four communities simultaneously, we would not be able to rule out other variables as the primary cause of behavior change. While our delayed treatment methodology lacks random assignment to condition (the fundamental element of an experiment), it provides an excellent method for ruling out variables such as season or timing as causal factors. The primary outcome measures were the number of responses to join the program, and the amount of oil collected in the months following the mailing.

Results of the pilot program were encouraging. In the first treatment condition (phone-in to sign up), there was a 22% increase in the size of the program; in the second treatment condition (mail-in sign up) there was a 45% increase in the size of the program. During the same period, the two control communities showed no change in the size of the program. When the intervention was distributed four months later to the delayed treatment communities, we again saw a corresponding increase in the size of the program (see Figure 1). Additional data were obtained showing the number of oil pickups each month. During the two months following the intervention, there was a 248% increase in the amount of oil collected through the curbside program. The control condition showed no change during this period. Interestingly, longer-term, follow-up data one year later showed a return to baseline levels in the amount of oil collected. While the size of the program was still substantially larger than it was initially, the volume of oil collected had returned to baseline levels. This final point suggests the need for ongoing intervention materials, or a more permanent change to the structure of the program.

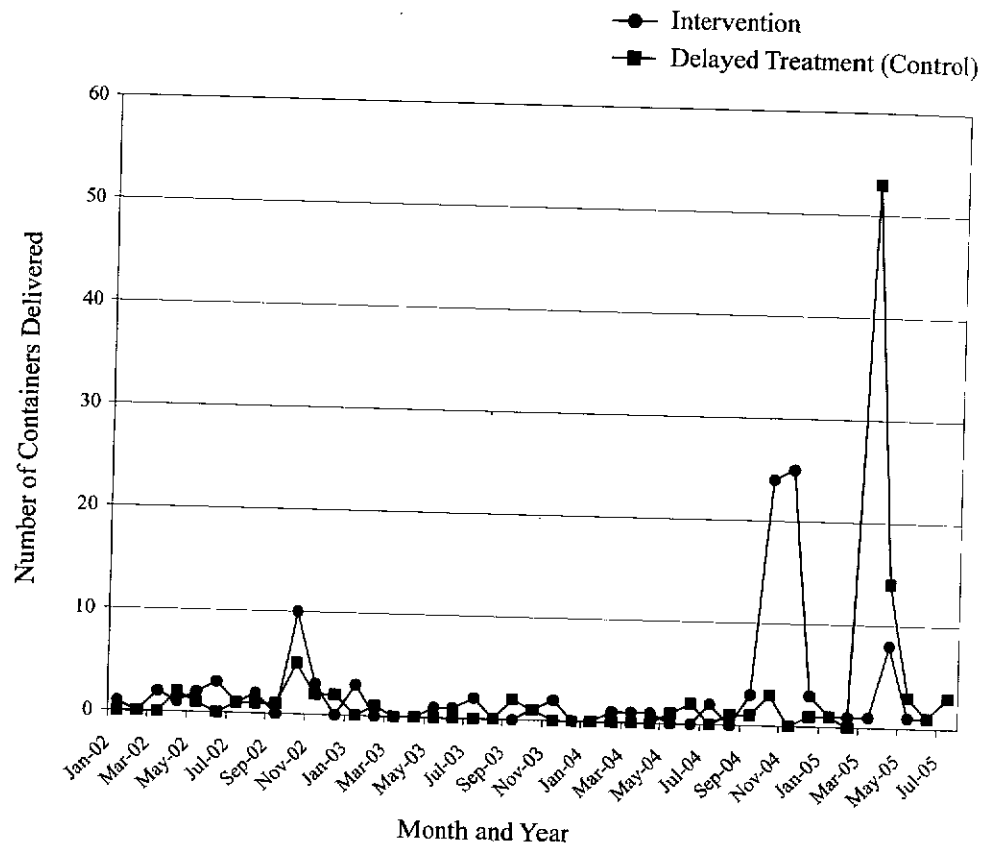


Figure 6.1. Number of Oil Storage Containers Distributed Each Month in Intervention and Control Communities in Napa County.

### An Oily Situation in Los Angeles

Our second CBSM example takes place in Los Angeles, California. Los Angeles is a large and ethnically diverse region, with a population of approximately 10 million. Demographics show that 74% of residents are white, 10% black, 13% Asian, and 47% are of Hispanic or Latino origin (regardless of race). Using statewide averages, we estimated that there were 1.9 million do-it-yourself oil changers in LA County, generating nearly 10 million gallons of waste motor oil per year. The used oil recycling program in Los Angeles consists of over 600 certified oil collection centers and weekly special collection events. These certified collection centers will only accept used oil if it is stored in a proper container.

Through a series of focus groups, county officials had identified lack of a proper storage container as an important barrier to proper disposal. Because of the existing data, we did not conduct any additional barrier surveys and we proceeded to develop a structural intervention focused on distributing proper containers to DIYers in LA County. To test the

efficacy of this approach, we partnered with local retail sites to distribute free, 15-quart oil containers to customers who purchased DIY supplies. The containers were distributed to customers as an incentive to return to the respective site and recycle their used oil. In addition to the container distribution, our research team created and pilot tested an alternative motivational message to accompany the container. The final message—"take the last step"—was affixed to half of the free oil containers. The sticker was in both English and Spanish ("Tome el último paso"). The other half of the containers was affixed with the standard state-sponsored sticker, containing the 1-800-CLEANUP phone number for the nearest collection center.

To evaluate the impact of the free motor oil containers, we identified eight matched pairs of Kragen Auto Parts stores throughout the county (16 stores total). The stores were matched based on the volume of oil collected, the primary language of the customers, and the growth in oil volume over the past four years. One member of each matched pair was randomly selected to receive the intervention, and the other served as a control. Four of the intervention stores received the free container with the standard sticker, and four received the free containers with the "Last Step" sticker.

In all, we distributed approximately 3,000 free oil storage containers. Containers were distributed during the first quarter of 2004 and the impact was tracked in the quarterly volume of oil collected at each store for a year following the intervention. Results showed that the "Take the Last Step" sticker produced the largest increase in the amount of oil recycled during the intervention. The average "Last Step" store collected 1,624 gallons of oil ( $SD = 513$ ), compared to their matched control stores of 1,331 ( $SD = 382$ ). This corresponds to a 22% increase in the amount of oil collected. The standard sticker ( $Mean = 1,009$ ) also produced an increase in the amount of oil recycled, compared to the matched controls ( $Mean = 955$ ), but the increase of 6% was not statistically significant.

The oil collection data were also analyzed by comparing changes to historical trends. In the four years preceding our CBSM intervention, there had been a slow but steady quarterly increase in the volume of oil collected through the certified centers ( $Beta = .89$ ;  $slope = 33$ ). For the four stores that received the standard sticker, the observed value did not deviate from the 95% confidence interval around the score predicted by the prior four years. That is, the amount of oil collected was not more than would have been predicted given the historical trend. But for the stores that received the "Last Step" message, the observed value ( $M = 1,624$ ) was significantly larger than the 95% confidence interval around the predicted value of 1,296. That is, it was substantially larger than what would have been expected from the existing trend. Taken together, the results show that the free oil container combined with an added motivational element ("Take the Last Step") produced a substantial increase in the amount of oil collected.

### **The Slippery Slopes of Rural Madera County**

Our third CBSM pilot took place in Madera County, California. According to the U.S. Census, Madera has a population of 142,788. The population is mostly white (89%), and nearly half of the population is of Hispanic or Latino origin (48%).<sup>23</sup> The county is rural, with a Census estimate of 57 persons per square mile. For comparison, California state has

217 persons per square mile; Los Angeles County has 2,344 per square mile; Napa County has 165 per square mile.

Used oil recycling in Madera County is managed through eight certified collection centers and sporadic special oil collection events. Based on population and statewide DIY rates, we estimated that 264,681 gallons of oil were generated by DIYers each year. But in the year prior to our intervention, only 38,596 gallons were collected through the eight certified centers (~15%).

Prior to the initiation of our CBSM pilot, Madera County had done little outreach to the DIY community, and there were no existing data from which to identify the barriers. As a starting point for our project, we conducted random digit dialing interviews with a sample of 502 Madera County residents. Of these, 125 were DIYers, resulting in a 25% county-wide DIY rate. As is typical for DIY surveys, the overwhelming majority of respondents were male (88%). Other demographics were comparable with county census figures, including ethnicity, income, age, and homeownership. The most common method reported for disposing of used motor oil was a retail collection site (49%), followed by a non-retail collection site (19%). The rate of admitted improper disposal was 10%.

The survey uncovered two clear barriers to proper disposal in Madera County. The first was inconvenience, including limited hours of operation, too few collection centers, and distance to the collection center. The second identified barrier was lack of motivation. While respondents had a favorable attitude toward oil recycling, they perceived it to be relatively difficult, and future intentions to use a collection center were generally low. Based on these findings, we developed a two-pronged intervention approach. The first was a structural intervention, designed to increase the number of collection facilities across the county. In particular, our aim was to recruit new retail collection centers in the rural areas of the county (at the time of our work, all eight collection facilities were in the more densely populated areas). The second prong of our intervention was to increase motivation on the part of DIYers by invoking a commitment to utilize the center.

Our first intervention—to increase the network of certified collection centers in the county—failed. At the start of the project, there were eight certified centers, located primarily in the more heavily populated areas of the county. By using GIS mapping software, we identified populations that were underserved by the existing network and we targeted retail outlets in those locations. Then, by canvassing the targeted communities, we identified 46 potential new collection centers. With the assistance of county staff, we contacted each site and offered to complete all paperwork required to become a certified collection center, and to pay all costs associated with their collection center status (including purchasing and installing storage tanks, hauling, and advertising). Of these 46 identified stores, 12 were willing to meet with our team and receive more information about the certification process. Unfortunately, following the initial meeting, none of the stores opted to proceed with certification. The reasons listed by each were classified into five categories:

- Liability issues surrounding spillage or leaking tanks
- Not enough room for the storage tank
- People leaving oil outside the store during non-business hours (so-called orphan oil)
- The financial costs of maintaining the program—staff costs for paperwork
- Too much unwanted contact with the government

These findings might be useful for future efforts to expand certified oil collection centers in rural areas. While recruitment efforts in rural areas might ultimately prove successful, we believe that other collection alternatives should be considered.

Our second intervention aimed to increase utilization of the existing collection centers. Based on prior research showing the potential for personal commitments to alter behavior, DIYers were approached at the point-of-purchase and asked to make a pledge to recycle their used oil and filters.<sup>24</sup> The pledge was verbal, and was reinforced with a sticker that read: "No matter what I drive, I pledge to recycle my used oil and filters." The person signed the pledge, and we affixed the pledge sticker to a funnel that we gave to them as a reminder of their stated commitment. The approach was developed to be simple so that it could be easily adopted more widely across the county.

To test the efficacy of the pledge intervention, we pilot tested it with a sample of 94 customers from Napa Auto Parts as they exited the store. Customers were randomly assigned to one of three experimental conditions: (a) information about where to recycle used oil, (b) information plus a free funnel with a standard recycling sticker (with the 1-800-CLEANUP phone number), or (c) information plus the funnel with the personal pledge sticker affixed. They were then asked a series of questions about their past behavior and future intentions to take their oil to the collection center. Participants were contacted again four weeks following the intervention and asked a series of questions about their recent behavior.

Results from the initial survey revealed a high rate of improper disposal. Nearly 20% of DIYers admitted to improper disposal over the past year, and only 53% reported using a collection center. When asked if, "the next time I change the oil on my car, I will recycle my used oil and filter" (with responses from 1 = strongly disagree to 5 = strongly agree), we found marginal differences across the three conditions. As expected, the information-only condition had the lowest intention, followed by the funnel-only condition. The commitment intervention showed the highest score. Of the 94 initial participants, 42 responded to our one-month follow-up. When asked about the "last time you changed the oil in your car," more participants in the commitment (37%) and funnel-only condition (40%) reported taking it to a collection center than did participants in the information-only condition (22%). In addition, more participants in the control condition reported improper disposal (6%), compared with participants in the commitment (0%) and funnel-only conditions (0%). The remaining oil was reported as "stored."

## Practical Considerations

From the description and examples above, it is evident that Community-Based Social Marketing offers a promising alternative to traditional information-based outreach campaigns. But when faced with developing and implementing a CBSM campaign, the practitioner will quickly be faced with a number of important decisions. In the following section, we offer some clarification and practical considerations.

## 1. Be Specific

Social marketing campaigns are almost always linked with a problem. For example, too many toxics in the waste stream; bacteria from pet excrement in local waterways; fertilizer run-off; illegal dumping of waste tires; high carbon emissions from motorists; and so on. The campaign is clearly intended to change behavior, but which behavior? First, it is essential to choose a behavior that is linked with the desired outcome. For example, if our goal is to decrease residential energy consumption, asking residents to "turn out the lights" when they leave a room is unlikely to move us toward our goal. Light bulb use is simply not a large enough percentage of residential energy consumption. We would be better off focusing on a larger one-time behavior such as turning down the temperature on the water heater, or adding extra attic insulation (but not both in the same message).

In addition to choosing a behavior that is associated with the desired outcome, it is essential to focus on a single specific behavior. Oftentimes, agencies use a marketing campaign as an opportunity to plug several different (hopefully related) programs and behaviors. For example, "keep your tires properly maintained and combine errands into one trip," "shift into clean: recycle oil and repair leaks," or "put waste in its place: dispose of used batteries and electronic waste." While such confounded messages are seemingly efficient by stretching advertising dollars to cover multiple programs, they are much less likely to change behavior than a more focused message.

Broad messages intended to spur residents to conserve energy are also unlikely to be effective (e.g., "flex your power"). Focusing on a single behavior is essential for creating an effective behavior change campaign. Telling local residents to "put waste in its place," "help keep our waters clean," or "conserve energy at home" are too vague, and do not give a specific action. What *exactly* do you want people to do? Be as specific as possible—what, where, when? For example, "Take your used motor oil to Kragen Auto Parts on Saturday to be recycled." Similarly, in our work we have found that focusing on what to do tends to be more effective than focusing on what *not* to do. First, telling people what not to do violates the specificity principle described in the preceding paragraph. It fails to give them a specific concrete action to perform. Second, telling people what not to do actually primes the behavior. That is, it gets people thinking about the undesirable behavior. Psychological research on priming has shown that the mere mention of a behavior or topic can increase the frequency of associated actions.<sup>25</sup>

## 2. Defining a Barrier

Simply stated, a barrier is anything that decreases the likelihood that an individual will engage in the desired behavior. As we discussed earlier in the chapter, barriers can be internal or external to the individual. Effective social marketing interventions target a specific barrier, and sometimes both an internal and an external barrier simultaneously. That is, the intervention involves a change to the program (structural) combined with an educational outreach piece (motivation). The LA intervention described earlier provides a good example of this two-pronged approach. The free oil containers were a structural intervention and the "last step" message was motivational.

### 3. Identifying Barriers

Identifying barriers to the target behavior is a hallmark of the CBSM approach. Begin by reviewing existing data. Most programs regularly collect information about the number of participants, types of materials, feedback from residents, and so forth. Sometimes there is already sufficient data on hand to identify the key barriers. But it is important to move beyond the office and program staff and even the HHW collection participants. That is, the data used to identify the barriers must come from members of the target audience. And in this regard, not all data are equally useful.

There are some types of data that should *not* be used in determining the barriers to a target behavior. These include: calls to a "hotline" or 1-800-telephone number, the number of hits or comments submitted through a program website, conversations with participants at a collection event or other program-sponsored activity, and feedback from program staff about the problems with the program. While these sources of data can provide a starting point, they cannot be taken as representative of the target population. They are samples of convenience—people who are fundamentally different from your target population of non-participants. And remember that the goal of the program is to reach people who *don't* already do the behavior. Identifying the barriers for these people often requires a survey.

### 4. Barrier Surveys

Surveys provide an excellent method for obtaining information about the target population, including people who do not currently utilize the program. Surveys can be conducted by postal mail, telephone, or in person. For a variety of reasons, we recommend against the use of email or Internet as a survey mode.<sup>26</sup> The goal of the survey is to solicit data from a broad and representative sample of the target population. They can be conducted by staff within the organization or contracted to a research firm or local university.

The three most prominent methods used to collect survey data are postal mail, telephone, and in-person interviews. Each of these methods can provide high-quality data, and determining which to use should be based on the topic, target population, and budget.

#### *Mail surveys*

This medium provides a cost-effective way to reach a large population. In our work, costs run about \$10 per complete, so obtaining a sample of 1,000 would cost about \$10,000. Response rates vary considerably, but using the Tailored Design Method, we have consistently obtained response rates in excess of 50%.<sup>27</sup> The biggest limitation with a mail survey is that the final sample size cannot be guaranteed. Indeed, your organization might spend \$10,000 and get only fifty returned surveys. Another limitation is language. If the target population is ethnically diverse, with a large percentage speaking a language other than English, they will not be able to respond to the survey. Sending the questionnaire in two languages is a cumbersome but viable method (we routinely send English and Spanish to selected areas, based on Census block group data), but more than two languages is problematic.

*Telephone surveys*

Telephone surveys provide an efficient mode through which to reach a large audience. Using a Random Digit Dialing method it is possible to reach a diverse sample of residents, and having a multi-lingual survey team can allow responses from a range of groups with limited English proficiency or literacy. With telephone surveys, it is easy to set a target sample size (e.g., 1000) and to continue making calls until the sample is reached. Given these advantages, telephone surveys have been the method of choice for professional survey teams for the past 30 years. Although changing technologies (e.g., cell phones, internet, answering machines, "do not call" lists) have introduced some problems, telephone surveys continue to be widely used. In our experience, costs run between \$30 and \$40 per complete.<sup>28</sup>

*In-person interviews*

While telephone and mail surveys are useful for reaching a broad audience, in-person interviews provide an excellent mode for obtaining in-depth data or reaching a narrowly defined population. One form of in-person interview—the intercept survey—is particularly useful in CBSM work. Intercept surveys are conducted out in the community (e.g., at a retail location). In our work, we have used intercept surveys to reach do-it-yourself (DIY) oil changers by surveying customers at auto parts stores. Intercept surveys are more expensive than the other modes discussed above, with costs ranging from \$50 or more per complete.

*Web-based survey*

As mentioned earlier, we are not advocates of web-based surveys for obtaining representative samples. However, many professional survey organizations have moved to web-based data collection. These organizations often maintain a large panel of ready survey-takers, and they sample from their panel for various surveys. While the costs for such surveys are generally low (\$5–\$10 per complete), their representativeness is highly suspect. In addition, although segmentation is generally possible (e.g., surveying only DIYers, or homeowners), it is usually not possible to get residents in a specific city or region.

In addition to mode of data collection, there are several other important considerations in conducting the barrier survey. First is sample size. Most professional survey firms (e.g., Gallup, CNN) aim for a sample size of 1,000. This number provides a high level of confidence in estimating characteristics of the population ( $\pm 3\%$ )—for example, the percentage of DIYers in the state. A sample size of 1,000 also affords a reasonable number of splits—that is, segmenting of the population. But the number 1,000 is not sacrosanct. Indeed, if the survey is intended to find female, Latina, DIYers, completing 1,000 random surveys with the general population would not be enough. But for most purposes, we find that a smaller sample size is sufficient. In most cases we are interested in finding the reasons that people give for not engaging in the target behavior, and their perceptions and knowledge about the program. In cases like this, where our interests are in descriptive and correlational results, a random sample of 100 is sufficient.<sup>29</sup>

In addition to the survey mode and sampling method, question wording and survey structure are fundamental to a good barrier survey. There are many good sources for instruc-

tion on writing survey items.<sup>30</sup> Our advice is to keep it simple. Clearly worded questions that directly measure the variables of interest are best. Keep the survey short (no longer than 10 minutes to complete), and write the questions so that they are understandable at a fifth grade comprehension level. Include both open-ended and closed-ended response formats. Open-ended items allow respondents to answer in their own words—for example, “Would you please describe the single most important reason why you do not recycle your used motor oil?” In contrast, closed-ended items provide for quantitative responses. For example, “Using a scale from 0 (not at all) to 10 (definitely), how much is *not knowing where to take it* a barrier that prevents you from taking your used motor oil to a collection center?”

A final point about barrier surveys pertains to interpretation. Survey data are based exclusively on self-report, and are thereby subject to the many limitations inherent in these types of responses. Indeed, psychological research is clear in showing a variety of insidious errors that undermine the accuracy of an individual's explanations for his/her behavior.<sup>31</sup> Thus, asking people why they do (or do not) engage in a specific behavior can lead to erroneous targets of intervention. For example, in a 2002 survey of California residents, we asked respondents to rate a series of reasons for conserving energy in their homes.<sup>32</sup> Not surprisingly, the highest rated “reason for conserving energy” was environmental protection, followed by benefits to society, saving money, and lastly, because other people are doing it. Yet, when we conducted a field experiment to test motivational messages targeting each of these “reasons,” only the message “other people are doing it” was actually motivational. The lesson: people are generally bad judges of what motivates them to engage in a behavior.<sup>33</sup>

One solution, which we have adopted in our work, is to look beyond the simple percentages and descriptive statistics (*i.e.*, means, frequencies, standard deviation). Correlations can be particularly useful in this regard, and can help to identify variables that are related to the target behavior. Correlations provide information about the strength and direction of the relationship between two variables. The direction of these relationships can be either positive or negative. Positive correlations exist when high scores on one variable are associated with high scores on another variable (*i.e.*, increases in knowledge about the location of an HHW facility are associated with increases in reported use of the facility). Negative correlations exist when high scores on one variable are associated with *low* scores on a second variable. For example, when high ratings of perceived barriers are associated with low ratings of self-reported behavior. In our work, we have often looked at correlations between self-reported perceptions of barriers and self-reported behavior. Barriers that correlate strongly (and negatively) with the behavior are those that are excellent targets for intervention (regardless of the mean scores or percentages). One word of caution when making these interpretations is to remember that correlations do not indicate causation. For example, a positive correlation between knowledge and behavior only indicates that these variables are related, and we cannot assume that increased knowledge will *cause* an increase in the desired behavior.

## Tools of Behavior Change

Throughout this chapter, we have maintained that psychological research offers a wealth of principles and techniques that can be used to motivate behavior change. While a thor-

ough review of these techniques is beyond the scope of this chapter, we highlight seven principles in the space below.<sup>34</sup>

### **Reciprocity**

One of the most fundamental human social tendencies is the obligation to repay what another person provides for us. Social scientists have found this rule to exist across cultures, and it appears that reciprocity is an adaptive mechanism that allows cultures and societies to function. This norm of reciprocity is extremely powerful, and applies even when the favor is not invited. Reciprocating reduces the uncomfortable feeling of indebtedness, and often the person will agree to a larger request as repayment for a small favor. In social marketing, reciprocity is most often invoked with give-aways or incentives (*e.g.*, free compact fluorescent light bulb, free oil container, inserting a \$1 bill with a mail survey).

### **Commitment and Consistency**

Individuals have a basic desire to remain consistent in their thoughts and actions. To maintain consistency, we will often change our beliefs or attitudes to match our behaviors. Similarly, we will alter subsequent behaviors to be consistent with our earlier actions. This principle can be invoked by obtaining an initial commitment (either verbal or written) to engage in the target behavior. It can also be invoked by asking residents to take a small first step (put a small sticker in their window) and then follow with a larger request. Similarly, stickers or other media that commit the person to a course of action (*e.g.*, "I recycle") can be effective motivational elements.

### **Liking**

People are much more likely to comply with a request from someone they know or like. Some of the factors that contribute to our liking for another person include similarity, praise or compliments, familiarity, or physical appearance. Requests to participate in a program are much more effective when they come from a familiar or liked source (*e.g.*, a friend, a neighbor, even a clerk at a neighborhood store).

### **Authority**

Messages that come from an expert or perceived authority on a topic can be particularly influential. Status as an authority can come from titles, appearances, or affiliations. This principle is invoked when an organization uses a famous or credible spokesperson (*e.g.*, a NASCAR driver promoting proper oil disposal, or the actor Tim Allen promoting proper disposal of tools and batteries).

### **Social Proof**

Humans are social animals, and as a result we use the behavior of others as a guide for our own actions. Seeing other people doing something (such as utilizing a program), or even just having the perception that other people are doing it, legitimizes the behavior and increases its frequency. Similarly, deviating from a norm can prompt feelings of pressure to conform. This principle can be invoked through advertising (*e.g.*, testimonials from local residents who use the program) or by making a behavior public (*e.g.*, visible curbside recycling bins).

### **Scarcity**

One of the basic tenets of economics is that limited supply and high demand lead to increased value. That is, as the availability of an item decreases and the demand increases, our desire to obtain the item increases. In advertising and marketing, this is often invoked through "limited time," "while supplies last" events, or promotions given away to the first few customers.

### **Norm of Responsibility**

A final principle that can lead to persuasion is the norm of responsibility. In general, we feel obligated to help those who are in need, especially individuals who cannot help themselves (like children or the elderly). As such, when a niece or nephew calls and asks if we would be willing to listen to their new sales pitch (and give them tips to improve), we are likely to agree (and in the end, purchase the product that they are pitching). This approach is often used by environmental programs that market their products through schoolchildren. Class sessions on recycling, litter, or household hazardous waste can include elements advocating the desired behavior that are taken home by children and given to parents.

Each of the seven principles just described can be easily incorporated into a social marketing campaign. As we have stated throughout this chapter, we recommend maintaining a specific focus and using just one principle at a time.

## **Identifying the Target Audience**

One mistake that is often made in outreach campaigns is a tendency to focus on people who already engage in the target behavior. That is, finding individuals who already participate in the program and asking these people the reasons for their actions. Using these motivations as targets for interventions is based on faulty logic and can lead to ineffective campaigns and programs. Given that the target population generally consists of individuals who do not engage in the desired behavior, it is best to identify the behavioral barriers for them. Indeed, these barriers might be quite different from those identified in a broader sample or in a sample of people who already perform the behavior. We strongly advocate

for the use of representative samples or targeted samples of nonperformers. Unfortunately, this point is often omitted in the barrier phase of CBSM work.<sup>35</sup>

## A Personal Touch

Research in psychology, communication, and marketing has repeatedly shown that person-to-person communication can be considerably more influential than passive media messages.<sup>36</sup> Indeed, this is one of the distinguishing elements of the *community-based* approach to social marketing. Unlike traditional forms of marketing, *community-based* social marketing emphasizes personal contact, and tailoring the outreach materials to a specific community and target population. The more narrowly defined the community, the more precise and focused the outreach materials and campaign can be. But there is a tension between *reach* and *impact*. Reach refers to the number of people who receive the message. Personal communication tends to have a narrow reach—the outreach team can only talk with a limited number of people. Impact refers to the change in behavior produced by the outreach campaign. The ideal is to design a campaign with high reach *and* impact. Unfortunately, such campaigns are rare.

A conceptual drawing of the relationship of impact and reach is shown in Figure 2. As shown, personal contact increases the amount of behavior change that results from a persuasive message (*i.e.*, its impact). One-on-one personal contact generates the highest amount of behavior change, followed by group discussions, personalized feedback, indirect contact like direct mail, and finally mass media messages (radio, television, and billboard). In the HHW arena, one innovative approach that utilizes one-on-one contact with high reach involves partnering with local retailers. At the point of purchase, clerks or floor staff can educate customers about disposal of different products. For example: "That's a good product, but make sure that you don't throw it in the trash. Because of all the dangerous chemicals, you need to take it to the collection center at \_\_\_\_\_. Here's a map and collection hours. It's free to use the center." Or consider the sales associate at a local auto parts store who tells a customer buying motor oil, "Hey, make sure to bring your used oil back here to be recycled. I've got a free storage container, if you need one."

Here we have suggested that one-on-one personal communications tend to produce the largest changes in behavior, and we have provided a conceptual example of how this could be implemented in a retail establishment. It's important to note here that such an approach *can* be effective, provided the management and staff at the retail establishment agree to participate. This cooperation often turns out to be difficult to obtain, and floor staff tend to take liberties with the wording or protocol that can undermine its effectiveness. While we believe that retail partnerships can be an effective means for making one-on-one personal contact, such relationships need to be carefully cultivated, and it's important to tailor the messages to the clientele and business model of the establishment.

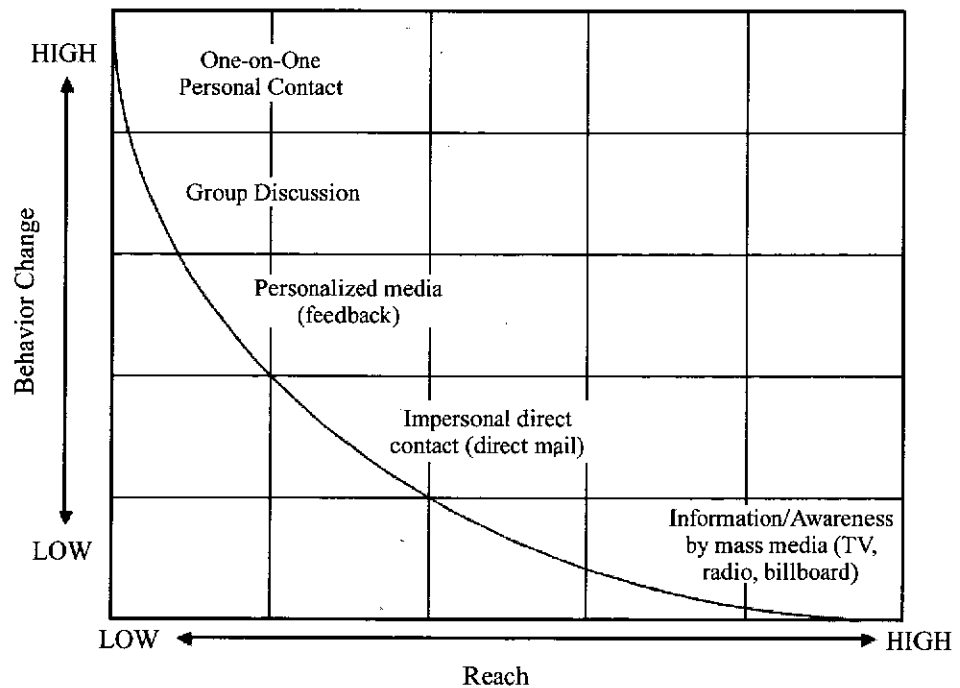


Figure 6.2. A Conceptual Drawing of the Inverse Relationship Between Reach and Impact.

### One Size Fits All?

It is tempting to look for ideas in neighboring areas to find current “best practices” for program design and outreach. Indeed, using similar messaging or branding can help to reinforce the message, and using a consistent set of graphics, logos, or messaging across a county, region, or state can stretch advertising dollars and reduce the likelihood that messages will compete against each other. Despite the potential advantages, there are some pitfalls with this approach.

Recall that a distinguishing feature of Community-Based Social Marketing is its emphasis on local programs, local barriers, and context-specific interventions. If the “community” is too large, we lose the local context. But how large can we go? How do we define community? Is a community a neighborhood, census tract, city, county, state? And how many people comprise a community? While there is no clear answer to these questions, the critical element is similarity. That is, a “community” shares many important demographic characteristics, and (most important) they share a similar set of barriers to the target behavior. We recommend using data to drive intervention decisions. If a neighboring area has created an effective collection program, use data to determine its applicability to your area prior to implementing. Are the target populations similar in demographics? Who uses the program? What barriers does the new program address, and do these barriers exist in your community? Again, consistent with the theme of this chapter: use data to inform your program and outreach.

## Conclusions

Every HHW program in the country relies on human behavior. In order to succeed, residents must use the collection system to dispose of their waste. Unfortunately, most programs, and subsequent outreach efforts to improve these programs, are based on faulty assumptions about human behavior. We often assume that lack of behavior results from lack of knowledge. We assume that "if people only knew about the program, surely they would use it." If this were true, then effective outreach materials would simply need to educate residents about the program. As a result, we have thousands of print, radio, and display advertisements nationwide that are intended to inform residents about the program or sometimes to "raise awareness" about the seriousness of the issue.

Unfortunately, the assumption that lack of action results from lack of knowledge often turns out to be false. While lack of knowledge can be a barrier to action, it is not sufficient by itself to motivate behavior. Because of this, many existing outreach efforts fail to motivate behavior change. Community-Based Social Marketing provides an alternative to information-based messages. The CBSM approach uses data from the target population to inform program and outreach material development. CBSM works by focusing on a specific behavior, surveying the target population to establish a base rate and barriers to the behavior, developing an intervention or making structural changes that directly address the barriers, and collecting data to evaluate the efforts to promote behavior change. The approach has been successfully used in many areas including HHW collection, and it offers a promising alternative for practitioners looking for an effective way to improve the success of their programs.

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## Notes

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22. Details about these messages are available in the final technical report for this project. It is available on-line at: <http://www.ciwmb.ca.gov/Publications/default.asp?pubid=1168>.

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26. While e-mail and Web surveys are tempting to use because of the low cost, they are unlikely to generate a representative sample. First, not every household has e-mail or Internet connectivity, so the sample is already biased against lower-income households. Second, response rates for Web surveys are notoriously low (in the 1% to 5%) range. While low response rates do not necessarily produce biased samples, there is reason to suspect that people who respond care more about the topic (and are more likely to already do the behavior) than non-responders. If problems of access and low response rate can be overcome, Internet and e-mail *might* provide a useable medium. But in our experience, these should be avoided.

27. Don A. Dillman, *Mail and Internet Surveys: The Tailored Design Method*, 2d ed. (New York: Wiley, 2002).

28. Of course, costs are affected by a number of factors, including length of the survey, required screening items (e.g., limiting the survey to homeowners, or commuters), number of languages, and sample size.

29. Our sample size of 100 is based on a statistical power analysis of the correlation coefficient. A sample of 85 will provide sufficient statistical power to detect ( $p < .05$ ) a medium effect ( $r = .30$ ) with power of .80. Note also our emphasis here on *random sample*. Focusing on a smaller sample should allow the practitioner to dedicate more energy (and resources) on the method by which the sample is obtained. Every effort should be taken to obtain an unbiased, representative sample of the target population. For more on statistical power analysis see Jacob Cohen, *Statistical Power Analysis for the Behavioral Sciences*, 2d ed. (Hillsdale, N.J.: Erlbaum, 1988).

30. For more on writing survey items see Dillman, *Mail and Internet Surveys*; Arlene Fink, ed. *The Survey Kit*, 2d ed. (Thousand Oaks, Calif.: Sage, 2002); and Stuart Oskamp and P. Wesley Schultz, *Attitudes and Opinions*, 3d ed. (Mahwah, N.J.: Erlbaum, 2005).

31. See for example Robert B. Cialdini, "Basic Social Influence Is Underestimated," *Psychological Inquiry* 16, no. 4 (2005), 158-61; Thomas Gilovich, Dale Griffin, and Daniel Kahneman, eds., *Heuristics and Biases: The Psychology of Intuitive Judgment* (New York: Cambridge University Press, 2002); Amos Tversky and Daniel Kahneman, "Advances in Prospect Theory: Cumulative Representation of Uncertainty," in *Preference, Belief, and Similarity: Selected Writings by Amos Tversky*, ed. Eldar Shafir (Cambridge, Mass.: MIT Press, 2004), 673-702; and also Jacquie D. Vorauer and Dale T. Miller, "Failure to Recognize the Effect of Implicit Social Influence on the Presentation of Self," *Journal of Personality and Social Psychology* 73, no. 2 (August 1997): 281-95.

32. Jessica M. Nolan, "Home Energy Conservation as a Social Dilemma: Exploring the Role of Social Uncertainty" (Master's thesis, California State University San Marcos, 2004).

33. Cialdini, "Basic Social Influence Is Underestimated," 158-61; Richard E. Nisbett and Timothy D. Wilson, "Telling More Than We Can Know: Verbal Report on Mental Processes," *Psychological Review* 84, no. 3 (March 1977): 231-59.

34. Interested readers are directed to more complete treatments by Robert B. Cialdini, *Influence: Science and Practice*, 4th ed. (Boston: Allyn and Bacon, 2001); Robert Levine, *The Power of Persuasion: How We're Bought and Sold* (Hoboken, N.J.: Wiley, 2006); and McKenzie-Mohr and Smith, *Fostering Sustainable Behavior*.

35. Throughout this chapter, we have argued that practitioners should focus their efforts on identifying and targeting people who don't already utilize the program. However, these efforts should

not alienate the existing users, and changes should generally be made to complement the existing program.

36. See for example Paul R. Abramson, John H. Aldrich, and David W. Rohde, *Change and Continuity in the 2000 and 2002 Elections* (Washington D.C.: CQ Press, 2003); Samuel J. Eldersveld and Richard W. Dodge, "Personal Contact or Mail Propaganda? An Experiment in Voting and Attitude Change," in *Public Opinion and Propaganda*, ed. Daniel Katz, Dorwin Cartwright, Samuel J. Eldersveld, and Alfred McClung Lee (New York: Dryden Press, 1954); Daniel Katz and Paul F. Lazarsfeld, *Personal Influence: The Part Played by People in the Flow of Mass Communication* (Glencoe, Ill.: Free Press, 1955); and also Paul F. Lazarsfeld, Bernard Berelson, and Hazel Gaudet, *The People's Choice*, 2d ed. (New York: Columbia University Press, 1948).